

Patent Claims

1. A method for rolling a metal strip (1) by means of a skin-pass rolling stand (7), the thickness of the metal strip (1) being reduced by the rolling in the skin-pass rolling stand (7), characterized in that the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) and the velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7) are set independently of the tension in the metal strip (1).
2. The method as claimed in claim 1, characterized in that the thickness of the metal strip (1) is reduced by between 0.1% and 5%.
3. The method as claimed in claim 2, characterized in that the thickness of the metal strip (1) is reduced by between 0.1% and 1%.
4. The method as claimed in claim 1, 2 or 3, characterized in that the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) and the velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7) are set with the ratio $(1-E^*)$ of the desired thickness of the metal strip (1) when it exits the skin-pass rolling stand (7) to the thickness of the metal strip (1) when it enters the skin-pass rolling stand (7).
5. The method as claimed in claim 1, 2, 3 or 4, in which a means for setting the strip entry velocity is provided for the purpose of setting the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7),

GR 99 P 3476

ga
- 8 -

and a means for setting the strip exit velocity is
provided for the purpose of setting

GR 99 P 3476

^{9(b)}
- 8a -

the velocity (v_0) of the metal strip (1) when it exits the skin-pass rolling stand (7), and a

- 10 -

controller (20) is provided for controlling the means for setting the strip entry velocity, and a controller (21) is provided for controlling the means for setting the strip exit velocity, a set value for the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) being fed to the controller (20) of the means for setting the strip entry velocity and a set value for the velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7) being fed to the controller (21) of the means for setting the strip exit velocity, characterized in that the set value ($v*(1-E*)$) for the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) and the set value ($v*$) for the velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7) are set at the ratio $(1-E*)$ of the desired thickness of the metal strip (1) when it exits the skin-pass rolling stand (7) to the thickness of the metal strip (1) when it enters the skin-pass rolling stand (7).

20

6. The method as claimed in claim 1, 2, 3, 4 or 5, characterized in that the set value ($v*(1-E*)$) for the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) is corrected as a function of a measured value ($v_{i,m}$) for the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) and of a measured value ($v_{o,m}$) for the velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7).

30

7. The method as claimed in claim 1, 2, 3, 4, 5 or 6, characterized in that the set value ($v*(1-E*)$) for the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) is corrected as a function of

GR 99 P 3476

^{10a}
- 8 -

a temporal mean ($\bar{v}_{i,m}$) of measured values ($v_{i,m}$) for the velocity (v_i) of the metal strip (1) when it enters the

GR 99 P 3476

10(b)
- 9a -

skin-pass rolling stand (7) and of a temporal mean ($\bar{v}_{o,m}$)
of measured values ($v_{o,m}$) for the

velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7).

8. The method as claimed in claim 1, 2, 3, 4, 5, 6 or 7,
5 characterized in that the roll nip in the skin-pass rolling stand (7) is set as a function of the tension in the metal strip (1) upstream of the skin-pass rolling stand (7) and as a function of the tension in the metal strip (1) downstream of the skin-pass rolling stand (7).

10

9. A device for rolling a metal strip (1) using a skin-pass rolling stand (7) in accordance with the method as claimed in one of the preceding claims, the thickness of the metal strip (1) being reduced by the rolling in the
15 skin-pass rolling stand (7), characterized in that the device for rolling the metal strip (1) has a means for setting the strip entry velocity, for the purpose of setting the velocity (v_i) of the metal strip (1) when it enters the skin-pass rolling stand (7) independently of
20 the tension in the metal strip (1), and a means for setting the strip exit velocity, for the purpose of setting the velocity (v_o) of the metal strip (1) when it exits the skin-pass rolling stand (7) independently of the tension in the metal strip (1).

25